

### **I. Summary of Claims**

Claims 1-20 are currently pending in the application, with claims 1 and 16 being independent claims. Claims 1-15 are unamended and remain, therefore, in their original, as-filed condition. Claims 16-20 were added in the Amendment filed April 8, 2004.

The following claim rejections were submitted by the Examiner in the outstanding Office Action:

- Claims 1, 4, and 6-15 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Number 6,339,726 to Miyata, et al.; and
- Claims 2-3 and 5 were rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Miyata and U.S. Patent Number 6,625,158 to Alexander, Jr., et al.

### **II. The Claims Patentably Distinguish Over The Applied Prior Art**

#### ***Discussion of Independent Claim 1***

Independent claim 1 recites the features of a control system for a vending machine with a controlled device. The control system includes (1) a main control unit and (2) a terminal control unit.

The main control unit controls the overall operation of the vending machine. According to Figure 1, for example, the main control program controls a display device, coin validator, and remote controller that each include one of the terminal control units. Referring to independent claim 1, the main control unit includes the following features:

- The main control unit is connected to the terminal control unit through a transmission path;
- The main control unit controls the terminal control unit through communication with the terminal control unit; and
- The main control unit includes a *transfer means for transferring a signal with a new control program to the terminal control unit* through the transmission path.

The terminal control unit controls the operation of the display device, coin validator, and remote controller. According to Figure 1, for example, each of the display device, coin validator,

and remote controller include a terminal control unit. Referring to independent claim 1, the terminal control unit includes the following features:

- The terminal control unit is connected to the controlled device for controlling the controlled device in accordance with a control program;
- The terminal control unit includes a memorizing means for memorizing the first-mentioned control program as a memorized control program; and
- The terminal control unit also includes *a rewriting means* connected to the memorizing means and the transfer means *for rewriting the memorized control program into the new control program*.

Based upon the above outline of independent claim 1, the control system includes two primary elements: the main control unit and the terminal control unit. The main control unit includes a transfer means for transferring a signal with a new control program to the terminal control unit. The terminal control unit includes a rewriting means for rewriting the memorized control program into the new control program. In other words, the main control unit transfers a new control program to the terminal control unit, and the terminal control unit rewrites an old control program with the new control program. In effect, therefore, the terminal control unit replaces the old control program with the new control program.

Schematically, the control system for a vending machine recited in independent claim 1 appears as follows:



Accordingly, independent claim 1 recites a configuration wherein the main control unit transfers the new control program to the terminal control unit.

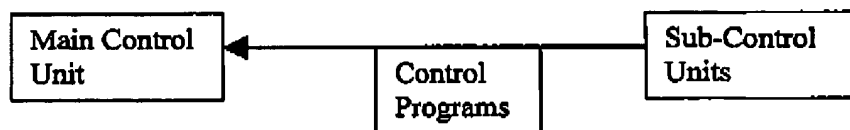
### Discussion of Miyata

Miyata discloses a vending machine with (1) a main control unit and (2) a plurality of sub-control units (i.e., terminal control units). The main control unit controls the overall operation of the vending machine. The sub-control units control portions of the vending machine. Accordingly:

- The *main control unit* in Miyata is analogous to the *main control unit* recited in independent claim 1; and
- Each *sub-control unit* in Miyata is analogous to the *terminal control unit* recited in independent claim 1.

According to Miyata, "Upon connection of sub-control units 2A, 2B, 2C and 2D with main control unit 1, specific main control programs  $P_{MA}$ ,  $P_{MB}$ ,  $P_{MC}$  and  $P_{MD}$  are transferred from sub-control units 2A, 2B, 2C and 2D, respectively, to...main control memory 11, so as to be stored therein" (Miyata, column 4, lines 2-6). In other words, control programs are transferred from the sub-control units to the main control unit.

Schematically, the control system for a vending machine disclosed in Miyata appears as follows:



Accordingly, Miyata discloses a configuration wherein the sub-control units transfer control programs to the main control unit.

This concept is further disclosed by reference to Figures 4A and 4B of Miyata, which illustrate the main control memory of the main control unit. Figure 4A shows the content of the memory in "the earlier stage" and includes the main control program  $P_M$  and a vacant area. Figure 4B shows the content of the memory in "the later stage" and includes the main control program  $P_M$  and specific main control programs  $P_{MA}$ ,  $P_{MB}$ ,  $P_{MC}$ , and  $P_{MD}$ . Accordingly, specific main control programs  $P_{MA}$ ,  $P_{MB}$ ,  $P_{MC}$ , and  $P_{MD}$  are transferred to the main control unit from the

sub-control units and replace the vacant area. This analysis is confirmed with reference to column 3, line 58 through column 4, line 6, which discusses replacing the vacant area of Figure 4A with the specific main control programs  $P_{MA}$ ,  $P_{MB}$ ,  $P_{MC}$ , and  $P_{MD}$  when the sub-control units are connected.

Based upon the above discussion, one skilled in the art would conclude that Miyata discloses a configuration wherein the sub-control units transfer control programs to the main control unit.

*Independent Claim 1 is Distinguished From Miyata*

Independent claim 1 recites that the main control unit transfers a new control program to the terminal control unit. In contrast with independent claim 1, Miyata does not disclose transferring control programs from the main control unit to the sub-control units (i.e., the terminal control units). Instead, Miyata discloses transferring control programs in the opposite direction.

The Examiner's Response to Arguments states the following: "Miyata does teach transferring control programs from the main control unit to the sub-control units as shown in col.4, lines 24-27 and col.3, lines 45-50" Column 4, lines 24-27 of Miyata states the following:

It is favorable, however, that main control memory 11 is loaded with specific main control programs  $P_{MA}$  to  $P_{MD}$  when sub-control units 2A to 2D are connected with main control unit 1, as in the preferred embodiment, because the loading is accomplished without any key operation.

This selection from Miyata is disclosing that sub-control units 2A to 2D load the main control unit with main control programs  $P_{MA}$  to  $P_{MD}$  when the sub-control units are connected to the vending machine. Accordingly, this passage further demonstrates the Applicant's arguments that Miyata discloses a configuration wherein the sub-control units transfer control programs to the main control unit. In addition, column 3, lines 45-50 of Miyata state the following:

The main control program for the control apparatus is composed of main control program  $P_M$  and specific main control programs  $P_{MA}$ ,  $P_{MB}$ ,  $P_{MC}$ , and  $P_{MD}$ . Specific

main control programs  $P_{MA}$ ,  $P_{MB}$ ,  $P_{MC}$ , and  $P_{MD}$  specified to sub-control units 2A, 2B, 2C and 2D, respectively, are stored in the respective sub-control units.

This selection from Miyata is disclosing that the sub-control units initially store specific main control programs  $P_{MA}$ ,  $P_{MB}$ ,  $P_{MC}$ , and  $P_{MD}$ . The fact that specific main control programs  $P_{MA}$ ,  $P_{MB}$ ,  $P_{MC}$ , and  $P_{MD}$  are later transferred to the main control unit is disclosed in following paragraphs (See the discussion of Figures 4 and column 4, lines 2-8).

Based upon the above discussion, the Applicants submit that neither of these selections from Miyata teach or suggest the concept of transferring a control program from the main control unit to the terminal control unit. Rather, these selections confirm that Miyata discloses a configuration wherein the sub-control units transfer control programs to the main control unit. Accordingly, Miyata does not teach or suggest the configuration recited in independent claim 1.

A further difference between independent claim 1 and Miyata is that Miyata does not disclose a rewriting means in the terminal control units. As discussed above, the control programs are transferred from the sub-control unit to the main control unit. Accordingly, there is no need for a rewriting means in the sub-control unit. In addition, Miyata does not disclose the concept of replacing a control program in the terminal control unit with a new control program.

Based upon the above discussion, the Applicants submit that independent claim 1 is allowable over Miyata. Given the deficiencies of Miyata discussed relative to independent claim 1, which are also incorporated into each of the dependent claims, the Applicants also submit that dependent claims 4 and 6-15 are allowable for at least the same reasons. Furthermore, the combination of Miyata and Alexander does not remedy this omission. Accordingly, each of dependent claims 2-3 and 5 should be allowable for at least the same reasons.

Independent claim 16 and dependent claims 17-20 include recitations that are substantially similar to independent claim 1. Accordingly, the Applicants submit that claims 16-20 are allowable for each of the reasons discussed above.